

**2SK222**

## Low-Frequency, Low Noise Amplifier Applications

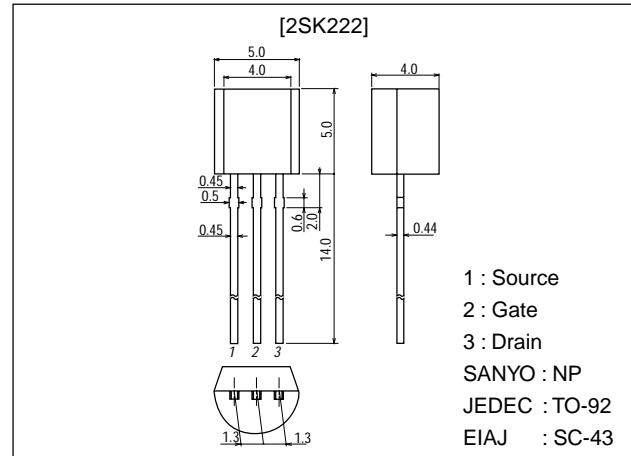
### Features

- Ultralow noise figure.
- Large  $|y_{fs}|$ .
- Low gate leakage current.

### Package Dimensions

unit:mm

2019B



### Specifications

#### Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		40	V
Gate-to-Drain Voltage	$V_{GDS}$		-40	V
Gate Current	$I_G$		10	mA
Allowable Power Dissipation	$P_D$		300	mW
Junction Temperature	$T_j$		125	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-40 to +125	$^\circ\text{C}$

#### Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -100\mu\text{A}$	-40			V
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = -20\text{V}$			-1.0	nA
Zero-Gate Voltage Drain Current	$I_{DSS}^*$	$V_{DS} = 10\text{V}, V_{GS} = 0$	0.6*		12.0*	mA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}, I_D = 10\mu\text{A}$		0.5		V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{kHz}$		17		mS
Input Capacitance	$C_{iss}$	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		14		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		3.5		pF
Noise Figure	NF1	$V_{DS} = 10\text{V}, V_{GS} = 0, R_g = 1\text{k}\Omega, f = 100\text{Hz}$		1.0	3.0	dB
	NF2	$V_{DS} = 10\text{V}, V_{GS} = 0, R_g = 1\text{k}\Omega, f = 1\text{kHz}$		0.6	1.5	dB
Equivalent Input Noise Voltage	$V_{NI}$	$V_{DS} = 10\text{V}, V_{GS} = 0, R_g = 1\text{k}\Omega, f = 1\text{kHz}$		2		nV/ $\sqrt{\text{Hz}}$

\* : The 2SK222 is classified by  $I_{DSS}$  as follows : (unit : mA).

0.6	C	1.5	1.2	D	3.0	2.5	E	6.0	5.0	F	12.0
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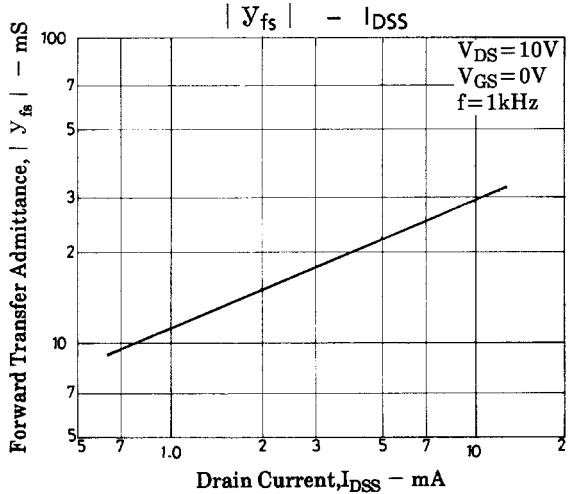
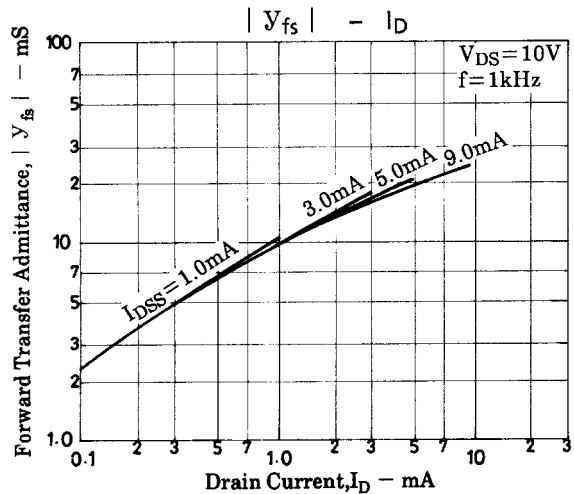
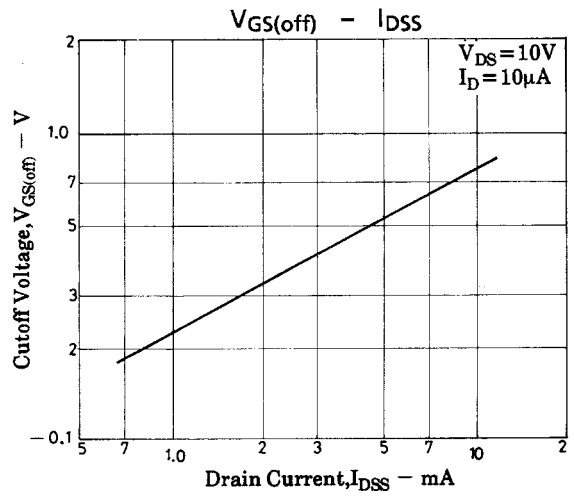
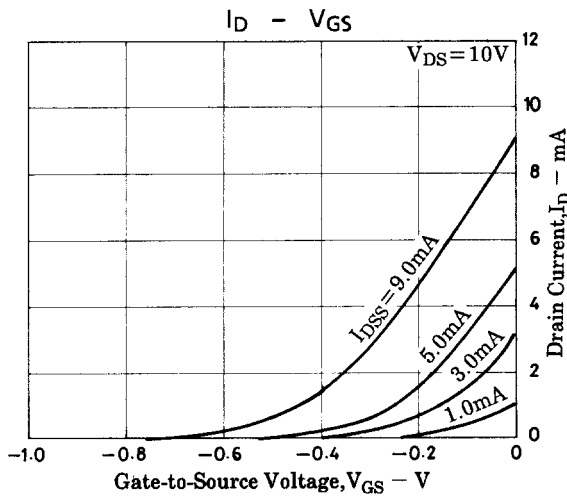
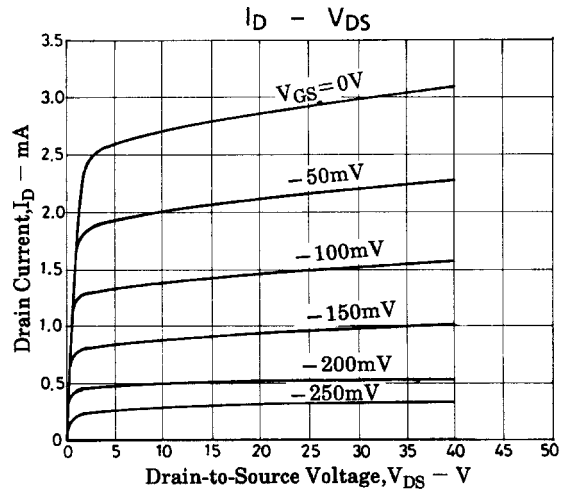
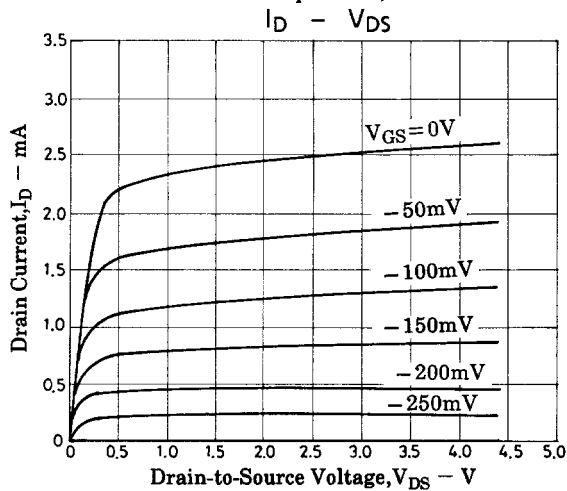
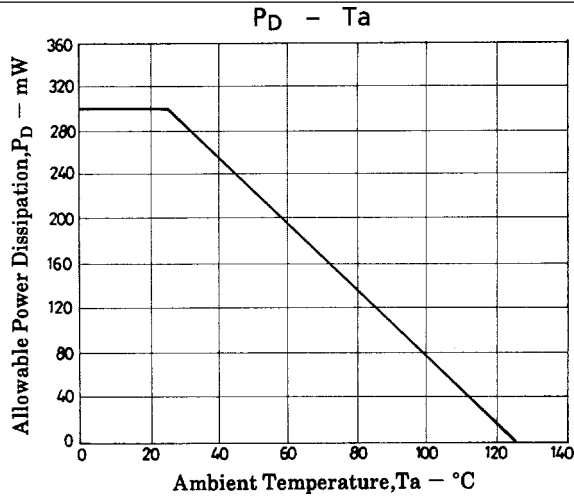
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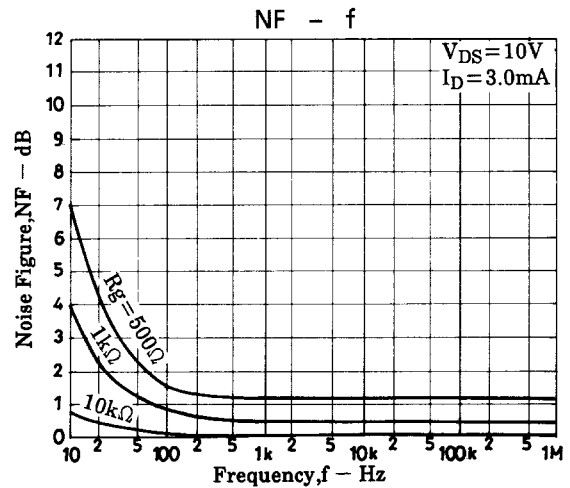
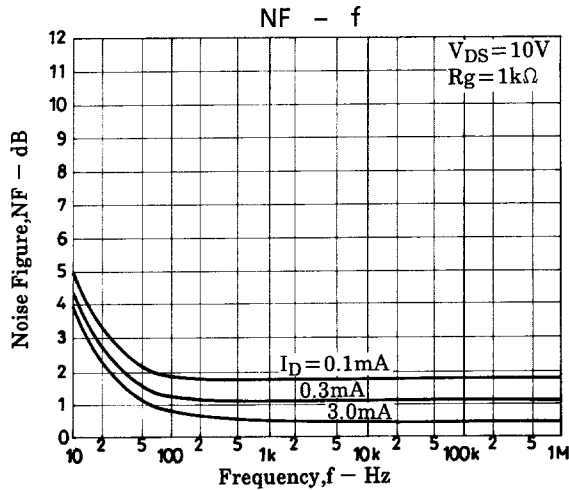
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